

CLAIMS

1. An aircraft ignition cable connector, comprising:

a radio-shielded ignition cable, said cable having an outer insulating cover, a shielding conductor, an inner insulating layer, and a center conductor;

5 a flexible, conducting, elbow tube, said elbow tube having a first end and a second end and being fixedly and conductively attached at its first end to the shielding conductor of said cable;

said elbow tube being capable of retaining a particular shape after bending;

10 a sealing sleeve, said sleeve joining said outer insulating cover to the first end of said elbow tube;

a threaded nut, said nut having a central orifice therethrough, a first end, a second end, a retaining lip at said first end and an internal thread extending from said second end toward said retaining lip;

15 a conducting ferrule, said ferrule being cylindrical in shape, having a central orifice therethrough, and having a body portion and a retaining portion;

said body portion having a first end and a second end and being sized and shaped to fit slidably through the orifice in the threaded nut and being fixedly and conductively attached at its first end to the second end of the elbow tube;

20 said retaining portion having a first end and a second end, said first end extending from the second end of the body portion and being sized and shaped to bear rotatably against the retaining lip of the threaded nut;

said second end of said retaining portion including a cylindrical recess;

a coil spring, said coil spring having a first end and a second end, said first end being sized and shaped to rotatably engage said cylindrical recess;

a cylindrical grommet, said grommet having a first end, a second end, being formed of resilient, insulating material and being sized and shaped to fit slidably over the inner insulating layer of the cable, said grommet including a surrounding shoulder disposed between said first end and said second end;

a washer, said washer being sized and shaped to fit slidably over the first end of the grommet and bear against said surrounding shoulder;

said coil spring being sized and shaped to surround the first end of the grommet and bear against the washer;

a spark plug lead button, said button being fixedly and conductively attached to the center conductor of the cable adjacent the second end of the grommet;

a cylindrical protector cap, said cap formed of insulating material and including an inner chamber and an external thread, said thread being size and shaped to engage the internal thread of the threaded nut; and

whereby, when the protector cap is unthreaded from the threaded nut and the cable connector is inserted into a spark plug of an aircraft engine with the spark plug lead button bearing against a central spark plug conductor and when the threaded nut is threaded onto an external thread of the spark plug, the coil spring will be compressed, causing the spark plug lead button to bear against the central spark plug conductor,

thereby providing a moisture-resistant connection between the cable and the sparkplug.

2. An aircraft ignition cable connector as described in Claim 1 wherein the flexible,
conducting, elbow tube is formed from a sheet of malleable metallic material, said
sheet having first and second, opposed parallel edges and third and fourth, opposed
parallel edges normal to said first and second edges, a series of single, back to back
folds parallel to said third and fourth edges, said sheet being formed about a cylindrical
mandrel, a long axis of said mandrel being perpendicular to said folds, said first and
second edges being joined to form an open-ended cylindrical tube.
3. An aircraft ignition cable connector as described in Claim 1 wherein the flexible,
conducting, elbow tube is formed from a sheet of malleable metallic material, said
sheet having first and second, opposed parallel edges and third and fourth, opposed
parallel edges normal to said first and second edges, a series of single, back to back
folds parallel to said third and fourth edges, lower portions of said folds being doubled
back upon themselves so as to provide four layers of metallic material adjacent a lower
surface of said sheet, said sheet being formed about a cylindrical mandrel with said
lower surface outermost, a long axis of said mandrel being perpendicular to said folds,
said first and second edges being joined to form an open-ended cylindrical tube having
a reinforced outer surface.

4. An aircraft ignition cable connector, comprising:

a radio-shielded ignition cable, said cable having an outer insulating cover, a shielding conductor, an inner insulating layer, and a center conductor;

a flexible, conducting, elbow tube, said tube having a first end and a second end and being fixedly and conductively attached at its first end to the shielding conductor of said cable;

said elbow tube being capable of retaining a particular shape after bending;

a sealing sleeve, said sleeve joining said outer insulating cover to the first end of said elbow tube;

a threaded nut, said nut having a central orifice therethrough, a first end, a second end, a retaining lip at said first end and an internal thread extending from said second end toward said retaining lip;

a conducting ferrule, said ferrule being cylindrical in shape, having a central orifice therethrough, and having a body portion and a retaining portion;

said body portion having a first end and a second end and being sized and shaped to fit slidably through the orifice in the threaded nut and being fixedly and conductively attached at its first end to the second end of the elbow tube;

said retaining portion having a first end and a second end, said first end extending from the second end of the body portion and being sized and shaped to bear rotatably against the retaining lip of the threaded nut;

said second end of said retaining portion including a cylindrical recess;

a cylindrical grommet, said grommet having a first end, a second end, being
 formed of resilient, insulating material and being sized and shaped to fit
 slidably over the inner insulating layer of the cable, said grommet
 including a surrounding shoulder disposed adjacent said first end, said
 5 shoulder sized and shaped to fit frictionally within the cylindrical recess
 in the second end of the retaining portion of the ferrule;
 a spark plug lead button, said button being fixedly and conductively attached to
 the center conductor of the cable adjacent the second end of the
 grommet;
 10 a cylindrical protector cap, said cap formed of insulating material and including
 an inner chamber and an external thread, said thread being size and
 shaped to engage the internal thread of the threaded nut; and
 whereby, when the protector cap is unthreaded from the threaded nut and the
 cable connector is inserted into a spark plug of an aircraft engine with
 the spark plug lead button bearing against a central spark plug
 15 conductor and when the threaded nut is threaded onto an external thread
 of the spark plug, the spark plug lead button will bear against the
 central spark plug conductor, thereby providing a moisture-resistant
 connection between the cable and the sparkplug.

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5. An aircraft ignition cable connector as described in Claim 4 wherein the flexible,
 conducting, elbow tube is formed from a sheet of malleable metallic material, said
 sheet having first and second, opposed parallel edges and third and fourth, opposed

parallel edges normal to said first and second edges, a series of single, back to back folds parallel to said third and fourth edges, said sheet being formed about a cylindrical mandrel, a long axis of said mandrel being perpendicular to said folds, said first and second edges being joined to form an open-ended cylindrical tube.

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6. An aircraft ignition cable connector as described in Claim 4 wherein the flexible, conducting, elbow tube is formed from a sheet of malleable metallic material, said sheet having first and second, opposed parallel edges and third and fourth, opposed parallel edges normal to said first and second edges, a series of single, back to back folds parallel to said third and fourth edges, lower portions of said folds being doubled back upon themselves so as to provide four layers of metallic material adjacent a lower surface of said sheet, said sheet being formed about a cylindrical mandrel with said lower surface outermost, a long axis of said mandrel being perpendicular to said folds, said first and second edges being joined to form an open-ended cylindrical tube having a reinforced outer surface.

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